

Ser No. 09/441,805

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1. (Amended) A wavelength division multiplexed optical system comprising:

a plurality of optical transmitters, each transmitter configured to transmit information at via at least one signal wavelength at a bit transmission rate and signal power, and wherein at least one transmitter transmits information at a first transmission rate and signal power and at least one other transmitter transmits information at a second transmission rate and signal power and the second bit transmission rate and second signal power are selected such that at least one of the following conditions: the second bit transmission rate is less the first bit transmission rate and the second signal power is greater than the first signal power, are met; and,

a plurality of optical receivers, each receiver configured to the receive information transmitted via at least one of the at least one optical wavelengths, wherein the at least one signal wavelength and bit transmission rate of each of said plurality of transmitters is selected to allow for the transmission of the information via the signal wavelength to at least a corresponding one of said plurality of said receivers without regeneration, wherein information transmitted at [a] the first bit transmission rate and first signal power to a first receiver without regeneration would require at least one of electrical regeneration and optical regeneration to reach a second receiver, which is configured to receive information at a second bit transmission rate and second signal power at a different destination than said first receiver without regeneration.

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11. (Amended) A method of transmitting information in an optical system comprising:

providing an optical path including at least first and second optical receivers at different destinations, the first and second receivers being configured to receive at least one signal wavelength from the optical path;

transmitting first information via a first signal wavelength at a first bit transmission rate and first signal power sufficient to be received by the first optical receiver without regeneration; and,

a2 transmitting second information via a second signal wavelength at a second bit transmission rate and second signal power sufficient to be received by the second optical receiver without regeneration, wherein the second bit transmission rate and second signal power are selected such that at least one of the following conditions: second bit transmission rate is less than the first bit transmission rate and the second signal power is greater than the first signal power, are met and transmitting information at the first bit transmission rate and first signal power to the second receiver would require at least one of electrical regeneration and optical regeneration.

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